

REMARKS

This is in response to the Office Action dated March 27, 2008. In view of the foregoing amendments and following representations, reconsideration is respectfully requested.

By the above amendment, claim 15 is amended; claims 17-21 are cancelled; and claims 29-36 are newly presented. Thus, claims 15-16 and 22-36 are currently pending in the present application.

On page 2 of the Office Action, the specification is objected to based on the format of the application. Accordingly, the specification and abstract have been reviewed and revised, and a substitute specification and abstract has been prepared. No new matter has been added. Also enclosed is a "marked-up" copy of the original specification and abstract to show the changes that have been incorporated into the substitute specification and abstract. The enclosed copy is entitled "*Version with Markings to Show Changes Made*."

Next, on pages 2-3 of the Office Action, claims 15-28 are rejected under 35 U.S.C. 112, second paragraph. In response, claim 15 has been amended to recite at least one structural element arranged in the electrolysis cell lining, and "the structural element is plate shaped and made out of a material resistant to a corrosive environment in the cell, and further having a system of ducts formed directly in it and thereby constituting an integral part of the structural element." Thus, claim 15 should now recite sufficient structure, and thereby comply with 35 U.S.C. 112, second paragraph.

Next, on page 3 of the Office Action, claims 17-21, 24-26 and 28 are objected to because the Examiner takes the position that the claims do not further limit the subject matter of the claim

from which they depend. In response, claims 17-21 have been cancelled. However, the remaining claims contain product-by-process limitations, which are common in apparatus claims. The issue therefore is the scope of the claims and the weight to be accorded the limitations. As instructed in MPEP 2173.05(p), "a product-by-process claim, which is a product claim that defines the claimed product in terms of the process by which it is made, is proper." Accordingly, the Examiner is requested to consider claims 24-26 and 28.

Next, on pages 3-6 of the Office Action, the claims are rejected over the prior art as follows:

Claims 15-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Holmen (WO87/00211); and

Claims 22, 23 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holmen in view of Eucker et al. (U.S. Patent No. 5,057,001) and Kotzlowski et al. (U.S. Patent No. 5,023,043).

It is submitted that the present invention, as least as embodied by independent claims 15 and 29, now clearly distinguishes over the applied prior art references for the following reasons.

Holmen discloses the use of metal plates with spiral ducts for extraction of heat from a side lining. In order to protect these plates against liquid electrolyte, an external layer of fireproof material, for example carbon, is used against the electrolyte. One problem with this solution will be ensuring good contact between the heat exchanger plates and the external cladding of fireproof material. Poor contact between these two layers will reduce the effect of the heat exchanger installation and thus lead to reduced heat recovery and reduced control of the

side layer's thickness in the electrolyte cell. Thus, in this metal based solution the metal plates and the pipes are placed behind the lining of the cell and not in the lining as required in claims 15 and 29. In fact the Holmen structure does not even constitute any part of the lining. Accordingly, Holmen does not meet each and every limitation of claims 15 and 29, and therefore cannot anticipate these claims under 35 U.S.C. 102(b).

Eucker discloses an apparatus for forming and producing ceramic tubes. The present invention is not related to an apparatus for the manufacture of ceramic tubes, but to the arrangement of structural elements in an electrolysis cell where the structural elements have ducts formed directly therein.

Kotzlowski discloses an arrangement of metallic cooling pipes on a graphite based heat shield for fusion reactors. Thus, the ducting in Kotzlowski is provided by separate metallic pipes, and not by ducts formed directly in the refractory material. Note, as required in claims 24 and 36, the ducting of the present invention is formed inside the structural element with no metallic piping inserted therein.


Accordingly, the collective teachings of the applied prior art references would not result in Applicant's invention as defined in claims 15 and 29. The remaining claims depend, directly or indirectly, from one of independent claims 15 and 29, and are therefore allowable at least by virtue of their dependencies.

In view of the above, it is submitted that the present application is now clearly in condition for allowance. The Examiner therefore is requested to pass this case to issue.

In the event that the Examiner has any comments or suggestions of a nature necessary to place this case in condition for allowance, then the Examiner is requested to contact Applicant's undersigned attorney by telephone to promptly resolve any remaining matters.

Respectfully submitted,

Ole-Jacob SILJAN

By: 
Michael S. Huppert
Registration No. 40,268
Attorney for Applicant

MSH/kjf
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
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